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Karsten Bruninghaus

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EXAMINER

KAO, JUTAI

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,731	Applicant(s) BRUNINGHAUS ET AL.	
	Examiner JUTAI KAO	Art Unit 2473	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-11, 13, 17 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-11, 13, 17 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 April 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Amendments submitted on 04/29/2010 are accepted by the examiner. Upon review of the amendments made to the specification and drawings, it has been determined that no new matter are added by the amendments and that the amendments have overcome previous objections made to the drawings.

The objections made to the drawings are withdrawn.

The 35 USC 112 rejections of claims 12-16 are withdrawn as these claims have been canceled by the amendments.

35 USC 112 rejections made to claims 18-19 and 21-23 are also withdrawn for the reasons/amendments described on page 12 of the applicant's remark made on 04/29/2010.

Response to Arguments

1. Applicant's arguments with respect to claims 9-11, 11-19 and 21-23 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 11 and 19, although Sastry and Desai teaches the control of resources at a inter-network forwarding routers as opposed to the wireless terminals of the claims, newly cited reference, Jouppi, as disclosed below are directed to the control of resources at wireless terminals. It would have been obvious for one of the ordinary skill in the art to look to teachings of Desai and Sastry for methods of resource

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allocations amongst different connections in order to modify the system of Jouppi, which also deals with resource allocations amongst different connections.

Regarding claims 11 and 19, the applicant argued that paragraph [0048] of Sastry teaches assigning no bandwidth to a lowest priority class, which teaches against the claimed limitation of "preventing the first wireless station from characterizing all of the channel capacity currently allocated to data links having a priority level less than the first priority level above the maximum threshold level as free channel capacity". However, in that particular example of paragraph [0048] of Sastry, it was the combination of two classes (Class A and Class B) that took away the resource that may have been requested by Class C. Therefore, the "first priority level" (Class A) did not characterize "all of the channel capacity" allocated to Class C. In addition, paragraph [0048] of Sastry was only an example in which Class C was not guaranteed any resources. The invention of Sastry may also assign percentages greater than 0 for all of the classes, in which case, all classes would retain at least a portion of the available resource regardless of the degradation of available resources.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 9, 10, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jouppi (US 2002/0177413) in view of Desai (US 7,254,141) and Cloutier (US 6,754,189).

Jouppi discloses a method for selecting a quality of service in a wireless communication system including the following features.

Regarding claim 9, a method for controlling the transmission of data between a first and second wireless station over a wireless transmission medium connecting the first and second station (see Fig. 1a, which shows an MS communicating over a wireless network that may connect to other MS), said method comprising: the first wireless station receiving a request for a new data link having a first channel capacity at a first priority level generated from a first application at the first station (see "when setting up a new connection in the wireless terminal MT1...The application transmits information about the need to set up a connection and the quality of service desired for the connection..." recited in paragraph [0037]); the first wireless station determining an

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available free channel capacity of the wireless transmission medium (see “the execution environment 403 examines if the wireless terminal has sufficient resources available to comply with the QoS requirements by the new connection” recited in paragraph [0037]).

Jouppi does not disclose the following features: regarding claim 9, wherein the free channel capacity includes a currently unused capacity and at least a portion of capacity currently allocated to data links having a priority level less than the first priority level; the first wireless station determining that the free channel capacity at the first priority level is less than the requested first channel capacity; and the first wireless station delaying the establishment of the new data link for a first period of time; regarding claim 10. preventing the degradation of already-existing data links having a priority level equal to the first priority level by excluding from the determination of free channel capacity the capacity currently allocated to data links having a priority level equal to the first priority level; regarding claim 21, the first wireless station establishing the new data link after the first period of time, the second wireless station determining that a second new data link established by the first wireless station having a priority equal to a priority of the one or more existing data link would cause a loss of quality of one or more existing data link; the second wireless station sending a message to the wireless first station instructing the first station to at least temporarily suspend the second new data link for a second period of time; regarding claim 23, wherein the determining that a second data link established by a first wireless station having a priority equal to a priority of the one or more existing data link would cause a loss of quality of the one or more existing links comprises detecting a buffer overflow condition.

Desai discloses a method for allocating bandwidth in a communication network including the following features.

Regarding claim 9, wherein the free channel capacity includes a currently unused capacity and at least a portion of capacity currently allocated to data links having a priority level less than the first priority level (see Fig. 3, wherein steps 314 and 318 compares the available capacity with the requested bandwidth; and see “Avail(I), represents available bandwidth for a specific priority I, and is determined based on total bandwidth of the link minus the total bandwidth of all provisional and actual connections of higher or equal priority” recited in column 4, lines 45-50; although Desai discloses the operation for requests received by a switch, Jouppi's wireless station is acting as a switch for the connections made by the applications of the wireless station; therefore, it would be obvious to look to Desai's method of managing connections in Jouppi's invention); the first station determining that the free channel capacity at the first priority level is less than the requested first channel capacity (see “No” branch of step 314 in Fig. 3).

Regarding claim 10, preventing the degradation of already-existing data links having a priority level equal to the first priority level by excluding from the determination of free channel capacity the capacity currently allocated to data links having a priority level equal to the first priority level (see “Avail(I), represents available bandwidth for a specific priority I, and is determined based on total bandwidth of the link minus the total bandwidth of all provisional and actual connections of higher or equal priority” recited in column 4, lines 45-50).

Regarding claim 21, the first wireless station establishing the new data link after the first period of time (see Fig. 3, which shows the steps of establishing a new connection), the second wireless station determining that a second new data link established by the first wireless station having a priority equal to a priority of the one or more existing data link would cause a loss of quality of one or more existing data link (see step 314, which determines that the requested bandwidth exceeds the available bandwidth; see “Avail(I), represents available bandwidth for a specific priority I, and is determined based on total bandwidth of the link minus the total bandwidth of all provisional and actual connections of higher or equal priority” recited in column 4, lines 45-50); the second wireless station sending a message to the wireless first station instructing the first station to at least temporarily suspend the second new data link for a second period of time (see reject request 313 in Fig. 3).

Cloutier discloses a method of queue length based burst management in wireless communication system including the following features.

Regarding claim 9, the method further comprises delaying the establishment of the new data link for a first period of time (see “Should sufficient resources be unavailable to accommodate the user, the base station must delay establishing a connection with the user and the user must wait until sufficient resources become available” recited in column 2, lines 58-65; wherein the first period of time is the time the user waits for sufficient resources becoming available).

Regarding claim 21, wherein the second wireless connection is suspended (see “Should sufficient resources be unavailable to accommodate the user, the base station

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must delay establishing a connection with the user and the user must wait until sufficient resources become available” recited in column 2, lines 58-65; wherein the second period of time is the time the user waits for sufficient resources becoming available).

Regarding claim 23, wherein the determining that a second data link established by a first wireless station having a priority equal to a priority of the one or more existing data link would cause a loss of quality of the one or more existing links comprises detecting a buffer overflow condition (see “the quantity of data would exceed the buffer size (overflow) and data would be lost” recited in column 6, lines 24-26).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jouppi using features, as taught by Desai, in order to allow higher priority service to preempt resources held by lower priority services; and to modify the system of Jouppi using features, as taught by Cloutier such that the user rejected of the connection waits for resources to become available in order to make the connection without overloading the capacity of the system or degrading the quality of the desired connection.

1. Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jouppi, Desai and Cloutier as applied to claims 9-10 above, and further in view of Sastry (US 2003/0058871).

Jouppi, Desai and Cloutier disclose the claimed limitations as shown above.

Jouppi, Desai and Cloutier do not disclose the following features: regarding claim 11, wherein a maximum threshold level of capacity currently allocated to data links

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having a priority less than the first priority level that can be considered as free channel capacity is defined at the first wireless station, and applied in determining free channel capacity, and the method further comprises preventing the first wireless station from characterizing all of the channel capacity currently allocated to data links having a priority level less than the first priority level above the maximum threshold level as free channel capacity; regarding claim 19, wherein the threshold level is a percentage of the capacity currently allocated to data links having a priority level less than the first priority level.

Sastry discloses a per hop behavior for differentiated services including the following features.

Regarding claim 11, wherein a maximum threshold level of capacity currently allocated to data links having a priority less than the first priority level that can be considered as free channel capacity is defined at the first wireless station (see "Classes with higher rate priorities receive a higher rate priority percentage of the available bandwidth than classes with lower rate priorities. These allocated rate priority percentages assure each class a minimum percentage of the actual available bandwidth" recited in paragraph [0043]; wherein as shown in Jouppi, determination of channel capacity is performed by the first wireless station; and the allocated rate priority of Sastry may be considered as a maximum threshold of capacity allocated to a priority), and applied in determining free channel capacity, and the method further comprises preventing the first wireless station from characterizing all of the channel capacity currently allocated to data links having a priority level less than the first priority

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level above the maximum threshold level as free channel capacity; (see "Classes with higher rate priorities receive a higher rate priority percentage of the available bandwidth than classes with lower rate priorities. These allocated rate priority percentages assure each class a minimum percentage of the actual available bandwidth" recited in paragraph [0043]).

Regarding claim 19, wherein the threshold level is a percentage of the capacity currently allocated to data links having a priority level less than the first priority level (see "Classes with higher rate priorities receive a higher rate priority percentage of the available bandwidth than classes with lower rate priorities. These allocated rate priority percentages assure each class a minimum percentage of the actual available bandwidth" recited in paragraph [0043]).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jouppi, Desai and Cloutier using features, as taught by Sastry, in order to "assure each class a minimum percentage of the actual available bandwidth if the actual available bandwidth degrades from the nominal bandwidth" (see Sastry, paragraph [0043]).

2. Claims 17-18 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Jouppi Desai and Cloutier as applied to claims 9 and 21 above, and further in view of ZHAO (US 2008/0056226).

Jouppi, Desai and Cloutier disclose the claimed limitations as shown above.

Jouppi, Desai and Cloutier do not disclose the following features: regarding claim 17, after the first period of time, the first wireless station determining again that the free channel capacity at the first priority level is less than the requested first channel capacity; and delaying the establishment of the new data link for a second period of time, the second period of time equal to the first period of time increased by a discrete value; regarding claim 18, wherein the determining of free channel capacity and delaying of the establishment the new data link is repeated until either the establishment of a data link is permitted or the attempt to establish the new link is finally halted by a termination condition; regarding claim 22, after the second period of time, the second wireless station determining that a third new link established by the first wireless station having a priority equal to a priority of the one or more existing data links would cause a loss of quality of the one or more existing data links; and sending a second message to the first wireless station instructing the first wireless station to at least temporarily suspend the third data link for a third period of time equal to the second period of time increased by a discrete value.

ZHAO discloses a method for maintaining a wireless data connection including the following features.

Regarding claim 17, after the first period of time, the first wireless station determining again that the free channel capacity at the first priority level is less than the requested first channel capacity (see Fig. 3, step 122, in which the connection may be delayed for a second time to the NO branch); and delaying the establishment of the new data link for a second period of time (setting the back off timer again in step 128 of Fig.

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3), the second period of time equal to the first period of time increased by a discrete value (see “back off timer is set to ever-increasing values” recited in the abstract).

Regarding claim 18, wherein the determining of free channel capacity and delaying of the establishment the new data link is repeated until either the establishment of a data link is permitted or the attempt to establish the new link is finally halted by a termination condition (see Fig. 4, in which the connection is repeated in steps 118, 122, 128 and 130 until the connection is established in step 160).

Regarding claim 22, after the second period of time, the second wireless station determining that a third new link (see Fig. 3, in which an unlimited numbers of new links may be established as the connections are lost and then re-established in steps 124-126) established by the first wireless station having a priority equal to a priority of the one or more existing data links would cause a loss of quality of the one or more existing data links (see Desai Fig. 3, as the requested bandwidth C_i exceeds the available capacity $Avail(I)$); and sending a second message to the first wireless station instructing the first wireless station to at least temporarily suspend the third data (see step 166 in Fig. 4, in which a message is sent to release the connection) link for a third period of time equal to the second period of time increased by a discrete value (see Fig. 4, after step 166, after the connection is lost and the new connection is rejected in step 122, the connection is suspended at least for a back off time period as shown in step 130; see “back off timer is set to ever-increasing values” recited in the abstract; such that the time period is equal to the previous back off period increased by a discrete value).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jouppi, Desai and Cloutier, in order to maintain an “always-on data connection” (see abstract of ZHAO).

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUTAI KAO whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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